# Standard Model Street

Objective: to produce a method for learning the Standard Model, the links between the particles and how they connect together.

Activity:

Pupils work in groups to make three families that live on the same street and their stories:

1. The Quarks:
   1. Three generations:
      1. Up and Down
      2. Charm and Strange
      3. Top and Bottom
2. The Leptons
   1. Three generations
      1. Electron and Electron Neutrino
      2. Muon and Muon Neutrino
      3. Tau and the Tau Neutrino
3. The Bosons - Brothers and sisters
   1. Photon (EM) - only 'speaks to' charged particles but they ignore other photons
   2. W boson (Weak) - speak to everyone
   3. Z boson (Weak) - speak to everyone
   4. Gluon (Strong) - only 'speaks to' quarks and other gluons
   5. Graviton (Gravity - though this hasn't been measured so could be the estranged older brother) - doesn't speak to anyone

Suggestions

* Make name cards for each character - get pupils to research charge of each particle, mass of each particle
* Pupils should create a persona for their characters that represents the name and properties of that particle
* Pupils could write a story that links them all together
* Try using [Particle Zoo](http://www.particlezoo.net) as a visualisation for the characters